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⑪ ① No. 960868

④⑤ ISSUED Jan. 14, 1975

⑤② CLASS 51-155  
C.R. CL.

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# CANADIAN PATENT

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BACKING MEMBER FOR SANDING PAD

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APPLICATION No. 136,911

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FILED Mar. 13, 1972

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PRIORITY DATE

No. OF CLAIMS 7

### ABSTRACT

This invention relates to an improved backing member for a sanding pad. The backing member is comprised of a central portion of generally cylindrical shape adapted to receive a nut, the integral middle portion consists of a series of ribs the bottom of which form part of the pressure face, the middle portion extends outwardly substantially beyond one half the length of any radii of the backing member. The outer portion integral with middle portion is in the shape of a rather flat annular ring.

This invention relates to a backing member for a sanding pad adapted to be attached to a drill or other motive force.

Sanding pads are comprised of a backing member, and a sandpaper support member. The backing member contains a threaded portion or similar fastening means on its upper surface which is adapted to be fastened to a sander, drill, or similar tool which will drive the backing member. As it is desirable in sanding operations that the abrasive generally follow the contours of the workpiece a resilient sandpaper support member is attached to the bottoms of the backing member. The resilient sandpaper support member may have canvas attached to it so that sandpaper can be glued to the canvas rather than to the resilient sandpaper support member.

Backing members have been used which are made of a disc of plastic or rubber having a central upstanding portion on the back enclosing a bolt or other fastening means. When these backing members are in use the disc bends near the central upstanding portion so that the maximum pressure on the resilient sandpaper support member and sandpaper occurs near the bend whereas it is desirable to have a firm pressure near the outer margin of the pad where the greatest relative speed exists during use. If the backing member is rigid, when pressure is exerted on the edge of the pad the pressure area remains at the edge of the paper. However, because of rigidity in the backing member there is little or no bending in the backing member so that a smaller area of the pad is kept in contact with the workpiece relative to the area of the sanding pad in contact with the workpiece when using a flexible backing member.

The backing member of this invention is comprised of a central, middle and outer portion. The central portion has a generally cylindrical shape and extends from the top to the bottom



of the backing member. The cylindrical core encloses fastening means by which the backing member may be fastened to the sander or drill. The bottom of the central core forms the central portion of the pressure face of the backing member. The middle portion of the backing member consists of a series of ribs radiating from the periphery of the central core. The ribs are generally right angular in elevation view, the bottom of the rib forming a part of the pressure face, the vertical position of the rib is integrally formed with the central core, and the top of the rib forming the hypotenuse is comprised of a curve the tangents of which form a continuously increased angle with the base of the rib. The top of the ribs are joined to the top of adjoining ribs by a thin shell of material leaving large open spaces between adjoining ribs in the bottom. The middle portion extends outwardly substantially beyond one half the length of any radii of the backing member.

The outer portion forms the periphery of the backing member. The outer portion is in the shape of a rather flat annular ring. The inner side of the outer portion is integral with the ribs and the bottom of the outer portion forms the annular periphery of the pressure face.

Because of the strength of the ribs the backing member will bend or twist only slightly in the middle portion even when pressure is exerted on the outer portion of the back up pad, keeping a large portion of the workface in contact with the working surface. The backing member is designed to follow the contours of a workpiece. The resilient sandpaper support material fastened between the backing member and the sandpaper moves upwardly into the open spaces between ribs when pressure is exerted on the bottom portion of the pressure face allowing greater curvature in the face of the sanding pad than could

otherwise be obtained without the open spaces.

In the accompanying drawings:

Figure 1 is a sectional view through the center of the backing member at a point where there is an open space in the bottom.

Figure 2 is a plan view of the backup member.

Figure 3 is a bottom elevation of the backing member.

Referring to Figure 1 there is shown a backing member 1 having a core 2, a middle portion 3 and an outer portion 4. The core 2 has imbedded therein a fastening device 5 formed from a single piece of metal. The fastening device 5 has flanges 6, 7 which have angular sides to provide better contact with the core material to transfer the drive from the motive force to the backup member. The top of the fastening device 5 is threaded 8 to receive the shaft of a sander drill or other motive force. The mid portion 3 consists of a series of open spaces 9 as shown in Figure 3 which lie between adjoining ribs 10. The ribs have the general crosssection 11 shown in Figure 1. The outer portion 4 is shown in Figures 1 and 3 and is generally flat forming an annular ring 11 integrally connected to the ends of rib members 10. An integral thin skin overlies the open spaces 9 between ribs 10.

In use the backing member has a resilient sandpaper support member adhered or otherwise fastened to it. The sandpaper is glued or otherwise attached to the resilient sandpaper support member. The backing member is fastened to a sander, drill or other rotary device to provide motive force. The central core and firm ribs enable pressure to be maintained on the pressure face on and near the periphery of the sanding pad.

Because of the flexible outer portion and the voids in between the ribs which receive part of the resilient sandpaper support member when it is under pressure, the sanding pad with this backing member follows the surface of the work piece.

It is to be understood that the specific nature of the present disclosure is not intended to be limited to the embodiment shown in the drawing and that various modifications and variations may be made to the backing pad by those skilled in the art without departing from the scope or spirit of the invention as  
10 herein claimed.



THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE  
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A backing member for a sanding pad having fastening means on top and a pressure face on the bottom comprised of a core, middle and outer portion, the top of the core includes fastening means by which the pad is adapted to be fastened to a motive force, the bottom of said core forms the central portion of the pressure face of the backing member, an integral middle portion comprised of a plurality of ribs extending from the core to the outer portion, said integral middle portion extending substantially beyond one half any radii of the backing member, the area between said ribs comprising a plurality of voids, a thin skin of material overlying the ribs and forming a covering for the middle portion and overlying the bottom side of the ribs, an outer portion integral with the middle portion having a generally flat annular appearance, the bottom of said outer portion forming the periphery of the pressure face of the backing member, the bottom of the ribs joining into and forming part of the pressure face of the backing member.
2. The backing member of claim 1 wherein the fastening means is comprised of a metal member having flanges for securely embedding the fastening means in the backing member and a threaded opening in the top of the fastening member.
3. The backing member of claim 1 wherein the bottom of the core, ribs and outer portion forming the pressure face are in a common plane.
4. The backing member of claim 1 wherein the upper surface of the backing member curves gradually from the outer portion to the middle of the backing member and sharply from the middle of the backing member to the top of the core.

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5. The backing member of claim 4 wherein the bottom of the ribs form a part of the pressure face of the backing member.

6. The backing member of claim 5 wherein the fastening means is comprised of a metal member having flanges for securely embedding the fastening means in the backing member and a threaded opening in the top of the fastening member.

7. The backing member of claim 4 wherein the upper surface of the backing member curves gradually from the outer portion to the middle of the backing member and sharply from the middle of the backing member to the top of the core.

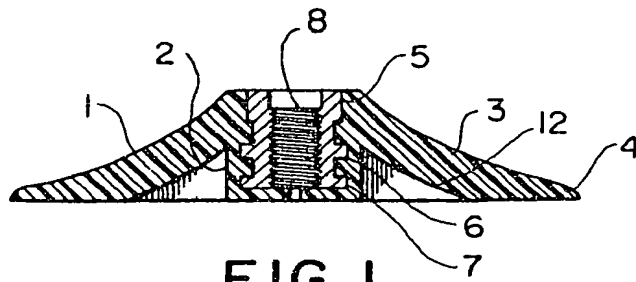


FIG. 1

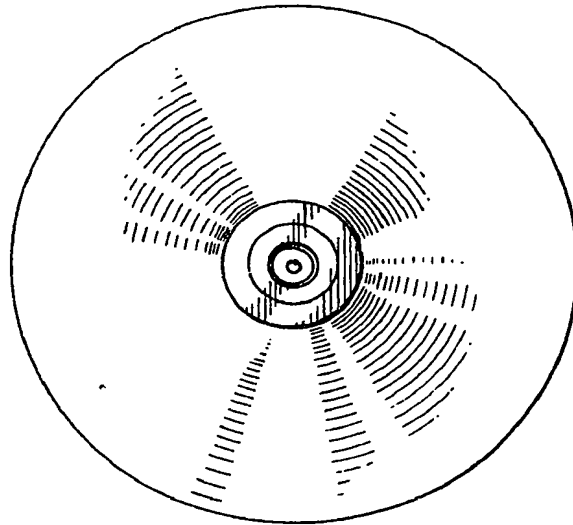


FIG. 2

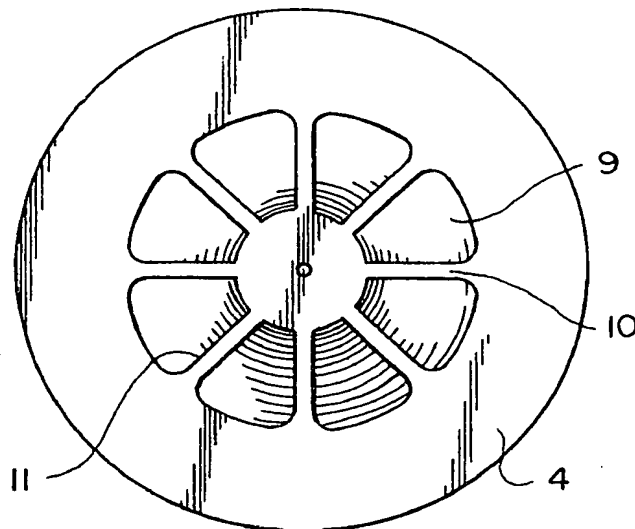


FIG. 3

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